

Stirrer Magnetic & Stirrer Magnetic Hotplate 3L

User Manual



Product Code	Descriptions
400.100.005	Stirrer Magnetic Hotplate up to 3L
400.100.105	Stirrer Magnetic up to 3L

Please read the User Manual carefully before use, and follow all operating and safety instructions!

Technical specifications and outline are subject to change without prior notice.

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Introduction

Welcome to the Magnetic and Magnetic Hotplate Stirrer User Manual. Users should read this Manual carefully, follow the instructions and procedures, and be aware of all the cautions when using this instrument.




Warranty

This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 12 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation. For claims under the warranty please contact your local supplier.

Delivery

This unit is supplied with one main unit, power cable, stirrer bar and user manual.

1. Safety Instructions

	Warning! <ul style="list-style-type: none">• Read the operating instructions carefully before use.• Ensure that only trained staff works with the instrument.
	Risk of burn! (hotplate model) <ul style="list-style-type: none">• Caution when touching the housing parts and the hotplate they can reach temperature of 280°C.• Pay attention to the residual heat after switching off.
	Protective ground contact! <ul style="list-style-type: none">• Make sure that socket is grounded (protective ground contact) before use.

- When working wear personal safety guards avoid the risk from:
 - Splashing and evaporation of liquids
 - Release of toxic or combustible gases
- Set up the instrument in a spacious area that's stable, clean, non-slip, dry and fireproof surface. Do not operate the instrument in explosive atmospheres, with hazardous substances or under water.
- Gradually increase the speed but reduce the speed if:
 - Stirring bar breaks away due to high speed
 - The instrument is not running smoothly, or container moves on the base plate
- When using the hotplate model temperature must always be set to at least 50°C lower than the fire point of the media used.
- Be aware of hazards due to:
 - Flammable materials or media with a low boiling temperature (Hotplate model)
 - Overfilling of media
 - Unsafe container
- Process pathogenic materials only in closed vessels.
- Check the instrument and accessories prior to each use. Do not use damaged components. Safe operation is only guaranteed with the accessories described in the user manual. Accessories must be securely attached to the device. Always disconnect the plug before fitting accessories.
- When using the external temperature sensor, the tip of the measuring sensor must be at least 5-10mm from vessel bottom and wall.
- The instrument can only be disconnected from the main power supply by pulling out the main or the connector plug.
- The voltage stated on the label must correspond to the main power supply.
- Ensure that the main power supply cable does not touch the hotplate. Do not cover the device.
- The instrument may only be opened by a qualified technician.
- Keep away from high magnetic field.

2. Proper Use

The instrument is designed for mixing and/or heating liquids in schools, laboratories or factories.

Observe the minimum distances between the devices and the wall and above the assembly (min. 100 mm)

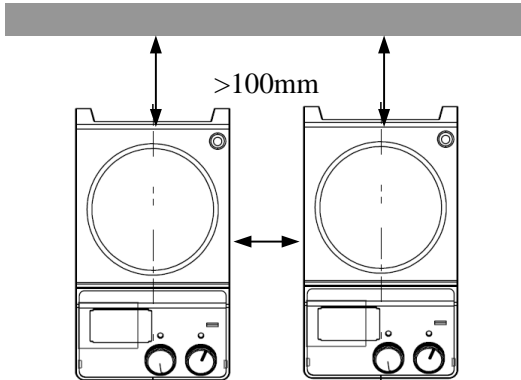


Figure 1

This device is not suitable for using in residential areas or other constraints.

3. Inspection

Receiving Inspection

Unpack the equipment carefully and check for any damages which may have arisen during transport. Please contact manufacturer/supplier for technical support.



Note:

If there is any apparent damage to the system, please do not plug it into the power line.

4. Control

Control elements

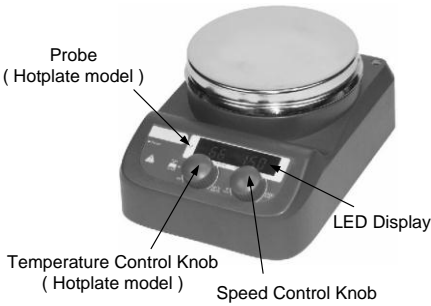
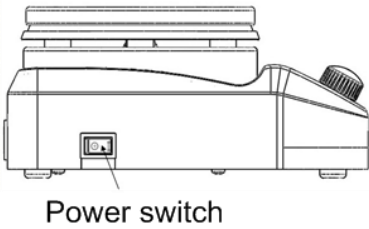




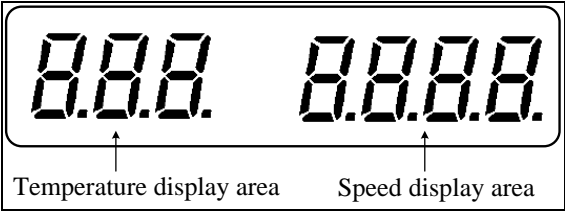


Figure 3 Digital model

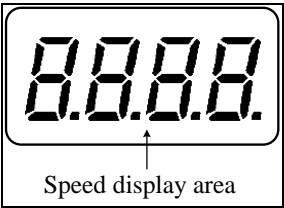


	Items	Descriptions
Magnetic Stirrer Hotplate	Temperature Control Knob 	Set the temperature parameters. The heating function is switched ON or OFF via push ON/OFF knob.
	Speed Control Knob 	Set the desired speed. The stirring function is switched ON or OFF via push ON/OFF knob.
	LED Display	LED displays the real working state and all settings.
	Probe	When the external temperature sensor PT1000 is plugged in, probe icon  is lit.
	Power Switch	Switches the instrument ON or OFF.
Magnetic Stirrer	Temperature Control Knob 	Set the desired speed. The stirring function is switched ON or OFF via push ON/OFF knob.
	LED Display	LED displays the real working state and all settings.
	Power Switch	Switches the instrument ON or OFF.

Display



Characters	Descriptions
Temperature display area	<p>When heating function is switched ON, the temperature setting is displayed and then switches to the real value in 5 seconds.</p> <p>When the heating function is switched OFF and the hotplate temperature is still above 50°C, LED displays “Hot”, otherwise LED displays OFF.</p>
Speed display area	<p>When stirring function is switched ON, the speed setting is displayed and flashes. The set value stops flashing when the desired speed is reached.</p>



Characters	Descriptions
Speed display area	<p>When stirring function is switched ON, the speed setting is displayed and flashes. The set value stops flashing when the desired speed is reached.</p>

5. Trial Run

- Make sure the required operating voltage and power supply voltage match.
- Ensure the socket is properly grounded.
- Plug in the power cable and ensure the power is on and begin initialising.
- Add the medium into the vessel with an appropriate stirring bar.
- Place vessel on the work plate.
- Set the target stirring speed and begin.
- Observe the stirring bar and LCD display (digital model).
- Set the target temperature and start heating.
- Observe the real temperature on LCD display (digital model).
- Stop the heating and stirring functions.
- If these operations above are normal, the device is ready to operate. If these operations are not normal, the device may be damaged during transportation, please contact supplier for technical support.



Warning!

Do not transfer the vessel when the instrument is powered on.

6. Function: Heating (hotplate model only)

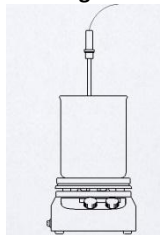
The device is controlled by digital temperature control technology, which has two separate safety circuits. The hotplate is kept at a constant temperature by a digital control circuit. The hotplate temperature can also be monitored from a separate, adjustable safety circuit. The two temperature sensors (PT1000) internal for temperature control are built into the hotplate. The single external PT1000 can monitor the temperature of sample.

- Plug in the external PT1000 temperature sensor.
- Set the temperature via rotating the temperature control knob slowly to the target value.
- When the heating function is switched on, the LED displays the temperature value on the left hand side.
- The heating function is switched on or off by pushing the heating knob.

The instrument automatically displays the last run speed and temperature parameters once turned on.

Generally, the instrument cannot display the actual temperature of sample in the vessel. In order to ensure the accuracy of the temperature inside the vessel, please use the external temperature sensor PT1000.

Working with external temperature sensor (hotplate model only)



The external temperature sensor PT1000 is the manufacture's standard accessory. If the sensor is plugged in, "Probe" will be shown on the digital display to indicate the sensor is operating. The setting value of external temperature sensors and actual temperature are displayed. Safe circuit controls hotplate temperature.

Comparing with the temperature control of the hotplate, the external temperature sensor can control the medium's temperature more precisely.

Residual heat warning 'HOT' (hotplate model only)

In order to prevent the risk of burns from a hotplate, digital hotplate has a residual heat warning function. When the heating function is switched off and the heating plate temperature is still above 50°C, "Hot" will flash to warn that there is a hazard of burns from the hotplate. When the hotplate temperature drops to below 50°C, the unit will automatically switch off. If users want to turn off the LCD immediately, just pull out the plug directly. When the plug is pulled out, the residual heat warning function will not work.

7. Stirring

The function "stirring" is switched on or off via rotating stirring knob. The speed is set on the knob (100 to 1500 rpm in steps of 10 rpm). When both of function heating and stirring are switched on and those above operations are done, the LCD will shift to the speed value and come back to the temperature value in about 5 seconds.

8. Faults

- Instruments can't be power ON
 - Check whether the power line is unplugged.
 - Check whether the fuse is broken or loose.
- Fault in power on self-test
 - Switch OFF the unit, then switch ON and reset the instruments to factory default setting.
- Stir speed cannot reach set point
 - Excessive medium viscosity may cause abnormal speed reduction of the motor.
- Unit cannot be powered off when switched off
 - Check if the residual heat warning function is still ON and hotplate temperature is above 50°C (the LCD still work and "Hot" flash).

If these faults are not resolved, please contact supplier.

9. Maintenance and Cleaning

- Proper maintenance can keep instruments working properly and lengthen its lifetime.
- Do not spray cleanser into the instrument when cleaning.
- Unplug the power line when cleaning.
- Only use recommended cleansers:

Dyes	Isopropyl alcohol
Construction materials	Water containing tenside / Isopropyl alcohol
Cosmetics	Water containing tenside / Isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

- Before using other method for cleaning or decontamination, the user must ascertain with the manufacturer/supplier that this method will not harm the instrument. Wear proper protective equipment during cleaning of the instrument.



Note:

- Electronic device cannot clean with cleanser.
- If you require maintenance service, must be cleaned the instrument in advance to avoid pollution of hazardous substances, and to send back into original packing.
- If the instrument will not use for a long time, please switch off and place in a dry, clean, room temperature and stable location.

10. Associated Standards and Regulations

Construction in accordance with the following safety standards:
EN 61010-1 UL 3101-1 CAN/CSA C22.2(1010-1) EN 61010-2-10
Construction in accordance with the following EMC standards:
EN 61326-1
Associated EU guidelines:
EMC-guidelines: 89/336/EWG Instrument guidelines: 73/023/EWG

Changes or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment. **NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at your expense.

11. Specifications Magnetic Stirrer Hotplate

Parameter	Specification
Plate Dimension	135mm \varnothing
Plate Material	Ceramic Coated Stainless Steel
Motor Type	DC Motor
Motor Rating Input	5W
Motor Rating Output	3W
Power	515W
Voltage	240V/60Hz
Stirring Positions	1
Maximum Stirring Volume (H ₂ O)	3L
Maximum Magnetic Stirrer Bar	50mm
Speed Range	100 to 1,500rpm
Speed Display	Digital, LED
Heating Output	500W
Heating Temperature	Ambient to 280 °C
Control Accuracy of Plate	$\pm 1^{\circ}\text{C}$ ($\leq 100^{\circ}\text{C}$) / $\pm 1\%$ ($\geq 100^{\circ}\text{C}$)
Safety Temperature	320°C
Temperature Display	Digital, LED
Temperature Display Accuracy	$\pm 1^{\circ}\text{C}$
External Temperature Sensor	Yes, PT1000
Control Accuracy with PT1000	$\pm 0.5^{\circ}\text{C}$
Residual Heat Warning	Yes, $\geq 50^{\circ}\text{C}$
RS232 Interface	No
Protection Class	IP21
Dimensions	150 x 260 x 80mm
Weight	1.8kg
Permissible Ambient Temperature	5 to 40°C
Permissible Relative Humidity	80%

12. Specifications Magnetic Stirrer

Parameter	Specification
Plate Dimension	135mm Ø
Plate Material	Plastic
Motor Type	DC Motor
Motor Rating Input	5W
Motor Rating Output	3W
Power	15W
Voltage	240V/60Hz
Stirring Positions	1
Maximum Stirring Volume (H2O)	3L
Maximum Magnetic Stirrer Bar	50mm
Speed Range	100 to 1,500rpm
Speed Display	Digital, LED
Protection Class	IP42
Dimensions	150 x 260 x 80mm
Weight	1.8kg
Permissible Ambient Temperature	5 to 40°C
Permissible Relative Humidity	80%

13. Ordering Information

Product Code	Descriptions
400.100.110	Stirrer Magnetic Hotplate up to 20L
400.100.010	Stirrer Magnetic up to 20L
Accessories	Descriptions
400.100.218	Sensor Temperature PT1000 230mm
400.100.219	Sensor Temperature PT1000 230mm – Glass Coated
400.100.225	Clamp Support for PT1000 Sensor
Reaction Blocks	Descriptions
400.100.320	Reaction Block 50mL Round Bottom Flask
400.100.330	Reaction Block 100mL Round Bottom Flask
400.100.340	Reaction Block 250mL Round Bottom Flask
400.100.350	Reaction Block 500mL Round Bottom Flask
Quarter Piece Systems	Descriptions
400.100.250	Quarter Piece Plate
400.100.255	Quarter Piece Ring
400.100.260	Quarter Piece 4mL Capacity
400.100.265	Quarter Piece 8mL Capacity
400.100.270	Quarter Piece 16mL Capacity
400.100.275	Quarter Piece 20mL Capacity
400.100.280	Quarter Piece 30mL Capacity
400.100.285	Quarter Piece 40mL Capacity



Choice Quality Affordability

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Distributor Details